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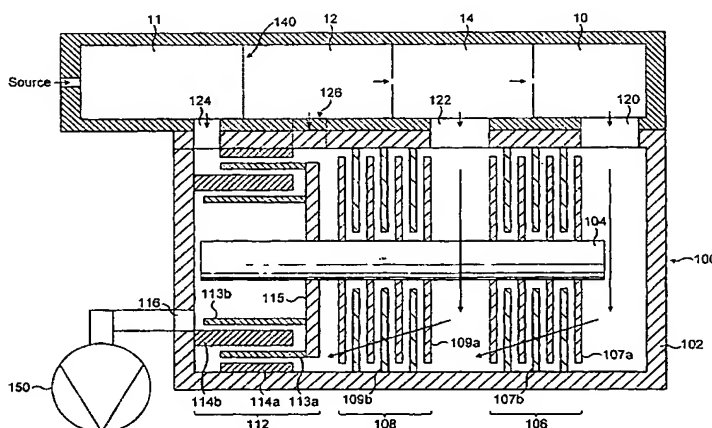
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(54) Title: VACUUM PUMP



(57) Abstract: A differentially pumped mass spectrometer system comprises a mass spectrometer having a plurality of pressure chambers; a vacuum pump attached thereto and comprising at least three pump inlets, a first pumping section, a second pumping section downstream from the first pumping section, and a third pumping section downstream from the second pumping section, an outlet from a first, relatively low, pressure chamber being connected to a first pump inlet through which fluid can enter the pump from the first chamber and pass through the first, second and third pumping sections towards a pump outlet, an outlet for a second, medium pressure chamber of the spectrometer being connected to a second pump inlet through which fluid can enter the pump and pass through, of said sections, only the second and third pumping sections towards the pump outlet, and an outlet for a third, highest pressure chamber of the spectrometer being connected to a third pump inlet through which fluid can enter the pump and pass through, of said sections, only at least part of the third pumping section towards the pump outlet; and a backing pump connected to the pump outlet such that, in use, at least 99% of the fluid mass pumped from the spectrometer passes through both the vacuum pump and the backing pump.

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